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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,806	03/30/2004	Siva G. Narendra	INTEL-0038	2840
34610 7590 09/27/2007 KED & ASSOCIATES, LLP P.O. Box 221200 Chantilly, VA 20153-1200			EXAMINER BOATENG, ALEXIS ASIEDUA	
			ART UNIT 2838	PAPER NUMBER
			MAIL DATE 09/27/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/811,806

Applicant(s)

NARENDRA ET AL.

Examiner

Alexis Boateng

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2, 6, 7, 9 - 11, 13, 16, 17, 20, 25, and 27 - 38 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

- 6) ☒ Claim(s) 1, 2, 6, 7, 9 - 11, 13, 16, 17, 20, 25, and 27 - 38 is/are rejected.

- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1, 2, 6, 9, 10, 11, 13, 16, 17, 20, 29 – 34, and 36 – 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe (U.S. 2001/0054881) in view of Bean (U.S. 2004/0036449).

**Regarding claims 1, 7, 14, and 25,** Watanabe discloses wherein a system comprising:

a detector to detect a voltage stored in an ultracapacitor (paragraph [0065]); and

an extractor to extract energy from the ultracapacitor, the extractor including: a first amplifier circuit to amplify an output voltage from the ultracapacitor when the detected voltage falls below a first predetermined voltage of a load coupled to the ultracapacitor (paragraphs [0069] – [0070]);

a divider to divide the amplified voltage form a first control signal for the first amplifier circuit (paragraph [0093]); and

a controller to generated a second control signal to vary a ratio of the divider, the varied ratio adjusting the first control signal to maintain the output voltage of the ultracapacitor substantially equal to or above the first

predetermined voltage of the load, the first amplifier circuit to amplify said output voltage independent of a charging operation of the ultracapacitor (figure 1 item 13, paragraph [0069]). Watanabe discloses the invention as claimed but does not disclose the remainder. Bean discloses in figure 1 item 110, wherein the power supply is an ultracapacitor based power supply. At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Watanabe system with the Bean system so the system may operate in a portable manner.

**Regarding claim 2,** Watanabe discloses wherein a system wherein the first amplifier circuit is to amplify said output voltage of the ultracapacitor to a level substantially equal to or above the first predetermined voltage during a time then the detected voltage of the ultracapacitor is above a second predetermined voltage of the first amplifier circuit (paragraph [0085]).

**Regarding claim 6,** Watanabe discloses wherein a second amplifier circuit to adjust impedance of the amplified voltage output from the first amplifier circuit (figure 1 item 22).

**Regarding claim 9,** Watanabe wherein the extractor further comprises a voltage regulator to adjust the changed voltage to maintain the first predetermined voltage (paragraph [0163] – [0164]).

**Regarding claim 10,** Watanabe discloses wherein a detector to detect a voltage in an ultracapacitor; and

an extractor to extract energy from the ultracapacitor, the extractor including an adiabatic amplifier to amplify voltage output from the ultracapacitor when the detected voltage falls below a first predetermined voltage of a load coupled to the ultracapacitor, wherein the adiabatic amplifier includes (figure 1 items 4A-D; paragraph [0069]):

first and second transmission gates that are alternatively switched output an amplified differential signal that corresponds to the amplifier voltage of the ultracapacitor (figure 1 items 4A-D).

**Regarding claim 11**, Watanabe discloses wherein a controller to monitor a change in the amplified voltage (figure 1 item 13); and

a voltage regulator to adjust the amplified differential signal to cause the amplified voltage of the ultracapacitor to be substantially equal to or above the first predetermined voltage (paragraph [0163]).

**Regarding claim 13**, Watanabe discloses wherein the extractor is a DC-DC boost converter (paragraph [0069]).

**Regarding claim 16**, Watanabe discloses wherein the varied ratio adjusts the first control signal to maintain the output voltage of the ultracapacitor substantially equal to or above the first predetermined voltage during a time when the detected voltage of the ultracapacitor is above a second predetermined voltage of an amplifier circuit that is to perform said amplifying (paragraph [0102]).

**Regarding claim 17**, Watanabe discloses wherein detecting a reduction in the increased voltage over time; and adjusting the reduced voltage to maintain at least the predetermined voltage of the load (figure 20 item 2).

**Regarding claim 20**, Watanabe discloses wherein said amplifying is performing by a circuit, which includes an adiabatic amplifier (figure 1 items 4A-D).

**Regarding claims 29 – 34**, Watanabe discloses wherein the first predetermined voltage corresponds to a minimum operating voltage of the load (paragraph [0008] and [0068] – [0069]).

**Regarding claims 36 – 38**, Watanabe discloses wherein the divider includes a network of variable resistors (paragraphs [0093] and [0102] – [0103]; figure 1 items 9 and 10).

3. Claims 27, 28 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe (U.S. 2001/0054881) in view of Bean (U.S. 2004/0036449) applied to claim 25 and in further view of Sasaki (U.S. 6,476,587).

**Regarding claim 27**, Watanabe and Bean do not disclose the invention as claimed. Sasaki discloses wherein the load is at least on of a power supply, processor, cache, chipset and a memory (figure 3 shows wherein the system is used to charge the components of a mobile device which includes a power supply, processor, cache, chipset and memory). At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Watanabe and the Bean system with the Sasaki system so that the system maybe used within a variety of applications.

**Regarding claim 28,** Watanabe and Bean do not disclose the invention as claimed. Sasaki discloses wherein the load, ultracapacitor and extractor are included on a single die (figure 1). At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Watanabe and Bean system with the Sasaki system so that the system may be used in mobile applications.

**Regarding claim 35,** Watanabe and Bean do not disclose the invention as claimed. Sasaki discloses in column 2 lines 63 – column 3 line 24 wherein the load is connected to path when it is above the first predetermined voltage level and disconnected when its below the first predetermined voltage level. At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Watanabe and Bean system with the Sasaki system so that proper charging is ensured and the system is not damaged by overdischarging.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1- 5, 10, 14, 16, 18, 20, and 29 - 34 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexis Boateng whose telephone number is (571) 272-5979. The examiner can normally be reached on 8:30 am - 6:00 pm, Monday - Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on (571) 272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AB



KARL EASTHOM  
SUPERVISORY PATENT EXAMINER